

## 89th Annual Meeting of the American Association of Physical Anthropologists

On-line

### **The Influence of Fruit Availability on Energy Allocation in Infant and Juvenile Bornean Orangutans**

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The juvenile risk aversion hypothesis suggests an extended life history is an adaptation to unpredictable environments, such as those that characterize Bornean orangutans. We examined how changes in infant and juvenile activity budgets changed over time and with varying periods of food availability. We hypothesized that during periods of low food availability juvenile orangutans would trade-off developmentally important behavior, such as play, in order to conserve energetic resources. We tested this hypothesis using 924 follows of infant (0-4 years) and juvenile (5-8 years) orangutans, collected over a 25 year period, encompassing period of high and low food availability at Gunung Palung National Park, Indonesia. Using a GLMM to control for individual and examining both age and food availability we found that overall, infant and juveniles played less during period of low food availability compared to medium and high food availability ( $b = -14.3$ ,  $p < 0.0001$ ) and that play behavior varied significantly by age ( $b = -5.9$ ,  $p < 0.0001$ ). Infants in the 1-2 age category showed the highest percentage of play, comprising 42% of their overall activity budget, with play dropping to 14% by age 4. We also found significant interaction effects between age and food availability on play behavior ( $b = 2.1$ ,  $p < 0.0001$ ). We discuss the ways that infants and juvenile trade off energetically expensive behavior through different development periods as well as the role that maternal behavior may play in buffering infants and juveniles of coping with periods of low food availability.

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